

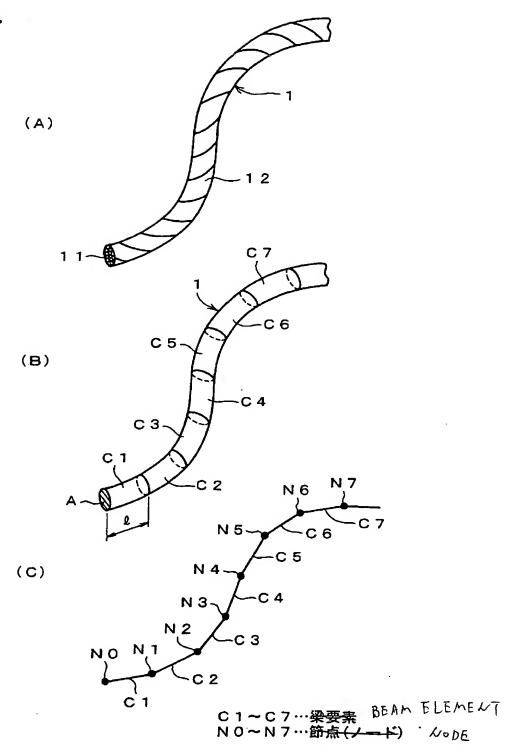
RESTRAINED DEGREES OF FREEDOM CORRUGATED ROUND-HOLE CLAMP CORRUGATED LONG-HOLE CLAMP ROTATIONAL RESTRAINT COMPLETE RESTRAINT COMPLETE FREEDOM X-AXIS TRANSLATION Y-AXIS TRANSLATION Z-AXIS TRANSLATION ROUND-HOLE CLAMP SUPPORT MEMBER LONG-HOLE CLAMP X-AXIS ROTATION Y-AXIS ROTATION **Z-AXIS ROTATION BRANCH POINT** CONNECTOR DISABLED ENABLED

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l Tin	<u>-</u> -[α	で有	2 <b>-{i</b> n	でで	2 福	点が全へ の	由自全宗	
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y to 木	A fer 不	し石	<b>刈-石不</b>	月中不	4-64	ていてた大利イーやいば	東耐蝨回	\ .
2~[ㅁ	7年下	Я <del>Б</del> 不	4.恒不	3 钜不	· A-@-不	いーそいても六点	東	ンド
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凡石不	み-恒不	斗布不	ター64	刈垣不	A-fine不	7-6445	東附全宗	
い一般時と	の軽しく	い <u>配</u> 静X	向大峙 Z 鉱並	向大輔 並並	向衣鹸X 並並	敦由自 <b>東</b> 府		⇒ I
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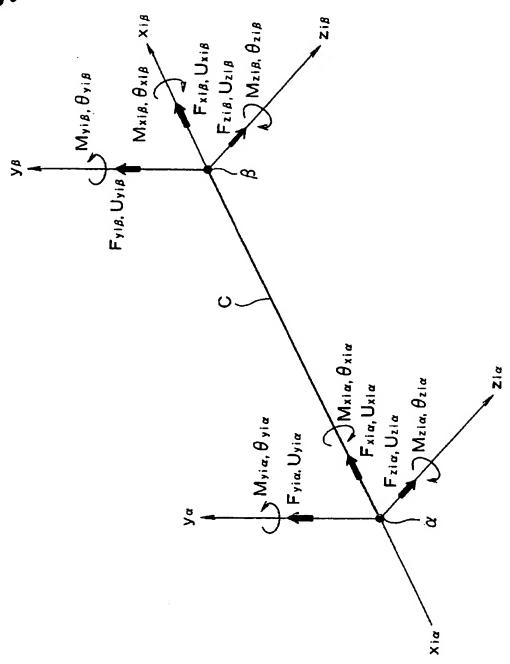
## Fig. 4

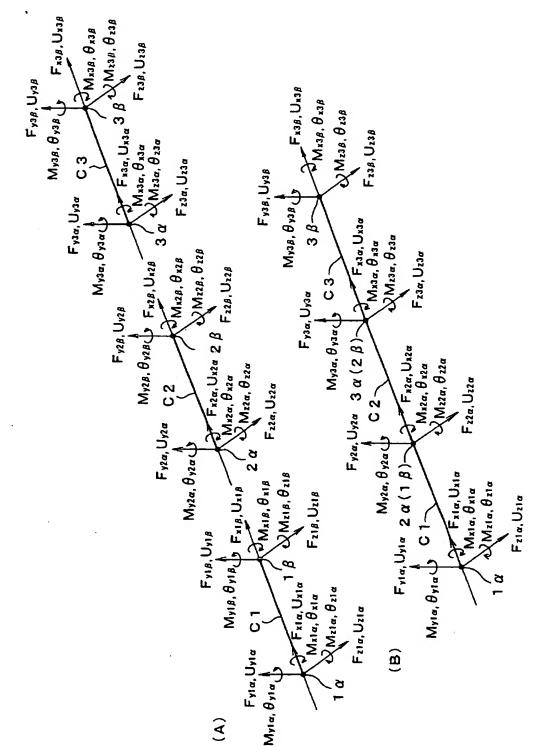


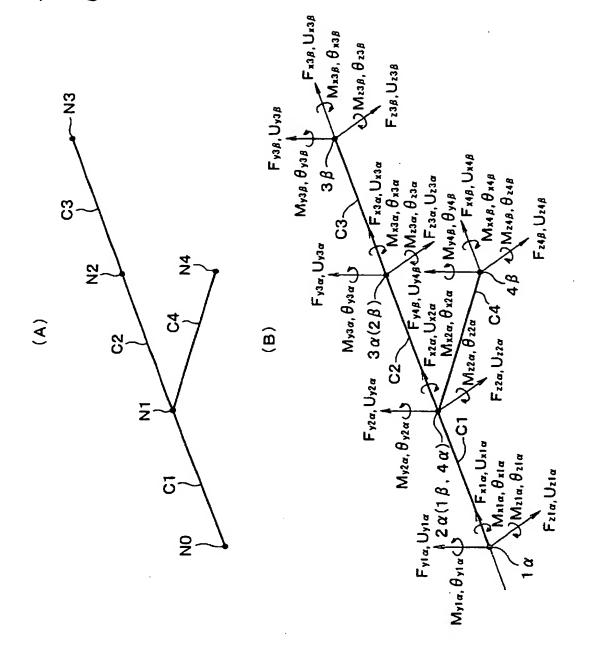
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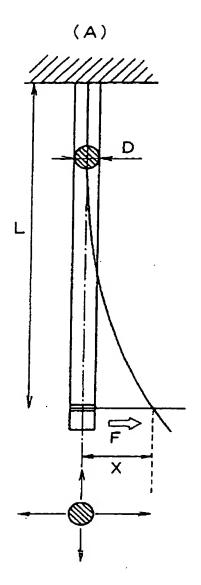
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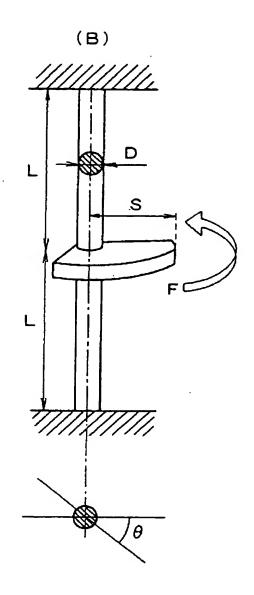
Fig. 5

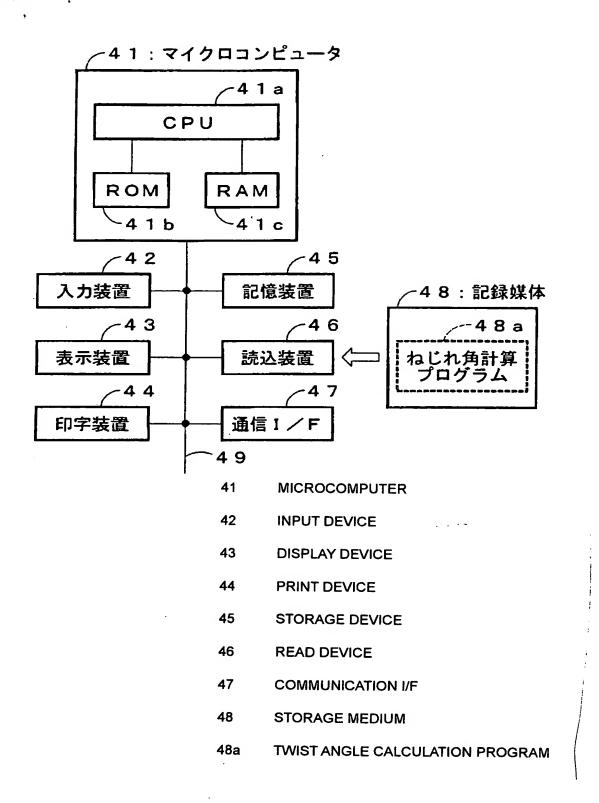


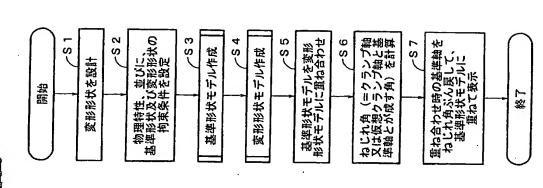












**DESIGN DEFORMED SHAPE** 

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START

Fig. 10

PROPERTIES, AND RESTRAINT CONDITIONS PHYSICAL

P

REFERENCE SHAPE AND DEFORMED SHAPE

PRODUCE REFERENCE SHAPE MODEL

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PRODUCE DEFORMED SHAPE MODEL \$

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SUPERIMPOSE REFERENCE SHAPE MODEL ON DEFORMED SHAPE MODEL

S.

CALCULATE TWIST ANGLE (= ANGLE FORMED BY CLAMP AXIS OR VIRTUAL CLAMP AXIS AND REFERENCE AXIS) တ္တ

RETURN REFERENCE AXIS AT SUPERIMPOSITION BY TWIST ANGLE, AND DISPLAY WITH BEING SUPERIMPOSED ON REFERENCE SHAPE MODEL S7

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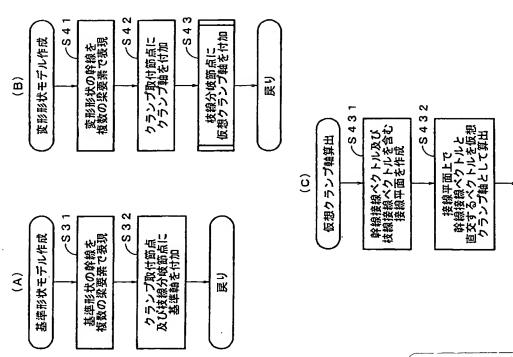


Fig. 11(A)

PRODUCTION OF REFERENCE SHAPE MODEL

S31 EXPRESS TRUNK WIRE OF REFERENCE SHAPE BY PLURAL BEAM

ELEMENTS

S32 ADD REFERENCE AXIS TO CLAMP ATTACHMENT NODE AND BRANCH WIRE

BRANCH NODE

RETURN

FIG. 11(B)

PRODUCTION OF DEFORMED SHAPE MODEL

S41 EXPRESS TRUNK WIRE OF DEFORMED SHAPE BY PLURAL BEAM

ELEMENTS

S42 ADD CLAMP AXIS TO CLAMP ATTACHMENT NODE

S43 ADD VIRTUAL CLAMP AXIS TO BRANCH WIRE BRANCH NODE

RETURN

IG. 11(C)

CALCULATION OF VIRTUAL CLAMP AXIS

S431 PRODUCE TANGENT PLANE CONTAINING TRUNK WIRE TANGENT VECTOR

AND BRANCH WIRE TANGENT VECTOR

S432 CALCULATE VECTOR WHICH IS PERPENDICULAR TO TRUNK WIRE

TANGENT VECTOR IN TANGENT PLANE, AS VIRTUAL CLAMP AXIS

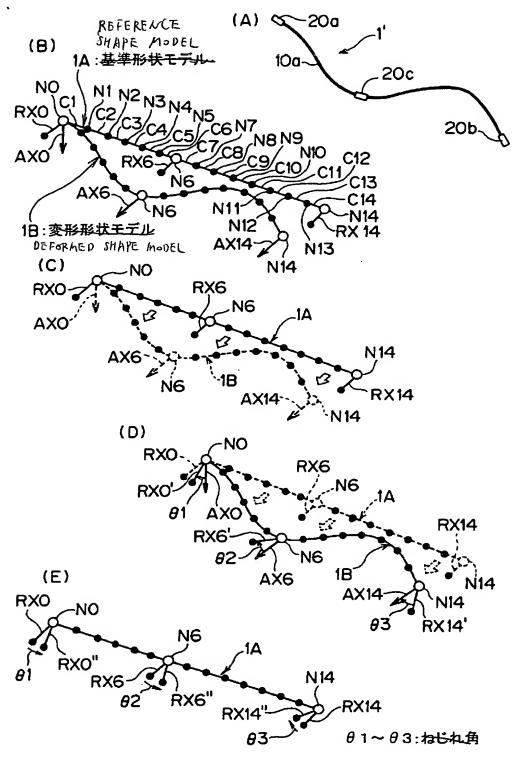
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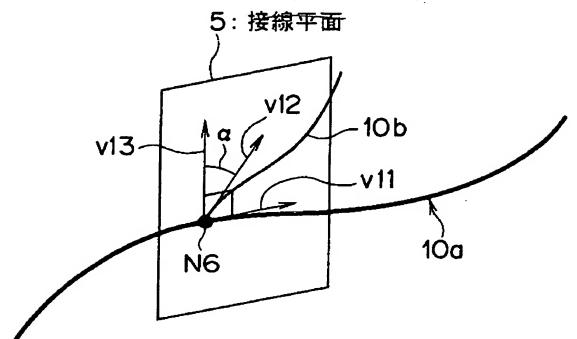
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TUST ANGLE

TANGENT PLANE

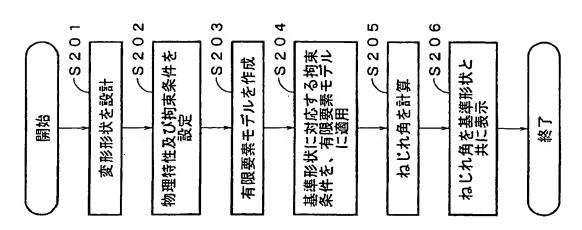


DISPLAY TWIST ANGLE TOGETHER WITH REFERENCE SHAPE SET PHYSICAL PROPERTIES AND RESTRAINT CONDITIONS APPLY RESTRAINT CONDITIONS PRODUCE FINITE ELEMENT MODEL REFERENCE SHAPE, TO FINITE ELEMENT MODEL DESIGN DEFORMED SHAPE CALCULATE TWIST ANGLE FIG. 14 START S201 S203 **S204** S205 S206 S202

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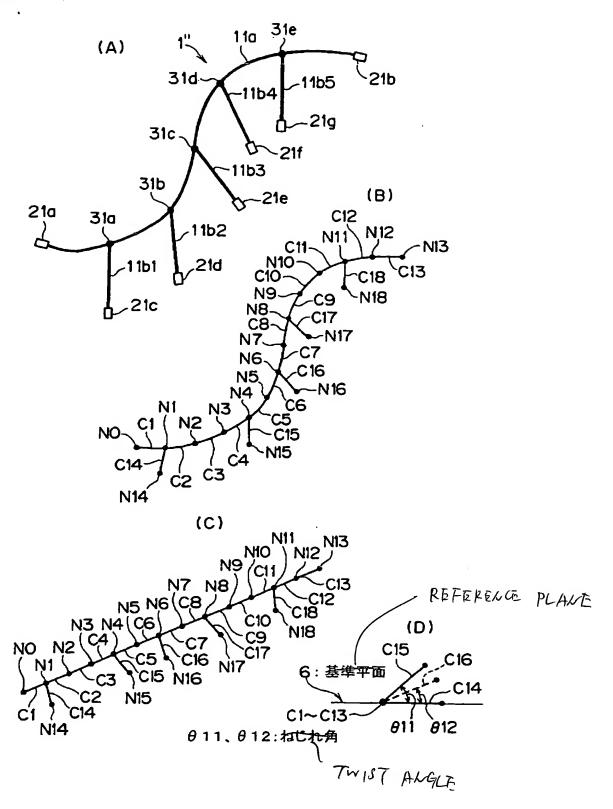
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CORRESPONDING



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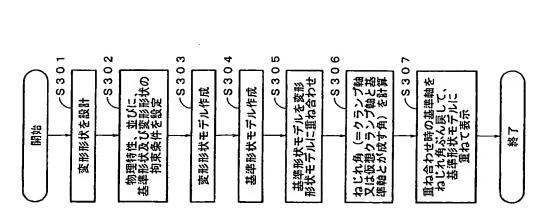
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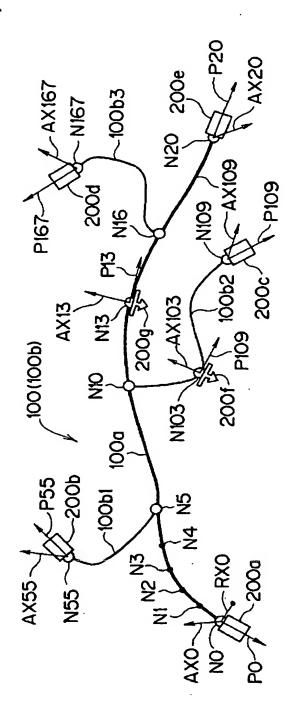
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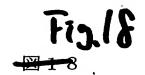
FIG. 16 START

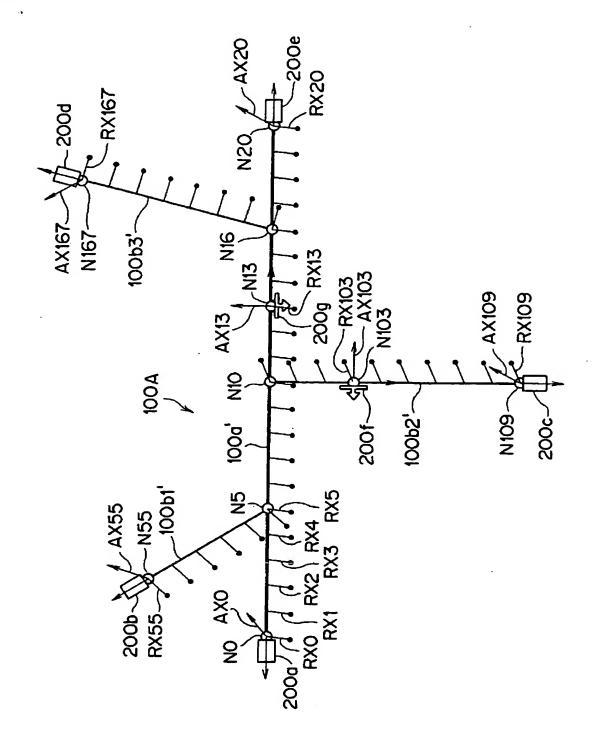


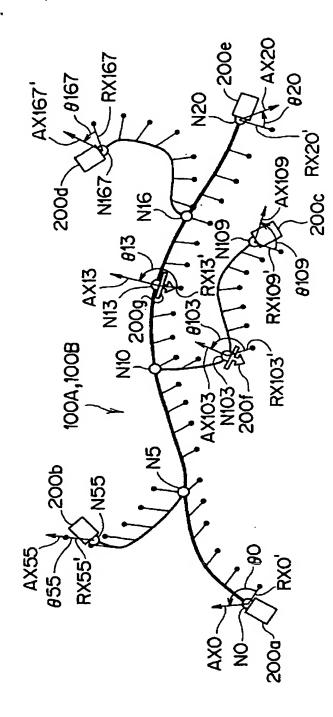
SUPERIMPOSE REFERENCE SHAPE MODEL ON DEFORMED SET PHYSICAL PROPERTIES, AND RESTRAINT CONDITIONS OF CALCULATE TWIST ANGLE (= ANGLE FORMED BY CLAMP AXIS OR RETURN REFERENCE AXIS AT SUPERIMPOSITION BY TWIST ANGLE, AND DISPLAY WITH BEING SUPERIMPOSED ON REFERENCE SHAPE MODEL PRODUCE REFERENCE SHAPE MODEL PRODUCE DEFORMED SHAPE MODEL REFERENCE SHAPE AND DEFORMED SHAPE DESIGN DEFORMED SHAPE VIRTUAL CLAMP AXIS AND REFERENCE AXIS) SHAPE MODE S301 **S302** S303 **S304** S305 **S306 S307** 8 2

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TWIST ANGLE

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FIG. 20 START S401 S402

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-5402 \$401 -S 4 0 3 -5404 -5405 -S407 -S 4 0 物理特性、並びに、 基準形状及び変形形状の 拘束条件を設定 基準形状モデルを変形 形状モデルに重ね合わせ ねじれゼロ面を クランプ軸と共に扱示 変形形状モデル作成 基準形状モデル作成 ねじれゼロ面設定 変形形状を設計 路路 807

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SUPERIMPOSE REFERENCE SHAPE. MODEL ON ..: DEFORMED

PRODUCE DEFORMED SHAPE MODEL PRODUCE REFERENCE SHAPE MODEL DISPLAY TWIST-FREE PLANE TOGETHER WITH CLAMP AXIS

SET TWIST-FREE PLANE

**S406** 

S407 END

SHAPE MODEL

S405

S404

SET PHYSICAL PROPERTIES, AND RESTRAINT CONDITIONS OF

DESIGN DEFORMED SHAPE

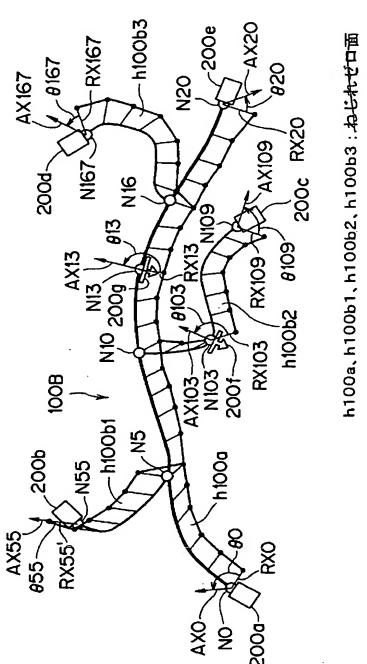
REFERENCE SHAPE AND DEFORMED SHAPE

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